



MCAST

MQF/EQF Level 4

Advanced Diploma in Cultural Heritage Skills

Course Specification

Course Description

This course addresses needs in the Cultural Heritage sector in order to support the management, conservation, preservation and care of such heritage. Successful candidates will be able to ethically collaborate with relevant stakeholders, and would work under the supervision of a heritage professional. The programme of studies provides the necessary applied theoretical material and ethical background in technical aspects of cultural heritage and heritage skills including stone, wood, metals, books, paper and textiles heritage skills, with training being carried out in workshops, laboratories and on site. The course also has an apprenticeship, which will allow students the opportunity to work alongside professionals and immerse themselves in the world of cultural heritage while getting the necessary training in the learning environment. Graduates of this programme can access the Bachelor in Conservation and Restoration Studies (Hons) course at the same Institute.

Programme Learning Outcomes

At the end of the programme the learner will be able to:

- 1. Demonstrate theoretical knowledge and understanding in various fields of cultural heritage and the ethics of its management, conservation, preservation and care;*
- 2. Build on educational foundations to pursue further studies and training in the field;*
- 3. Demonstrate cognitive and practical skills essential to the basic management, preservation and care of cultural heritage resources;*
- 4. Apply technical and/or craft-based skills to support cultural heritage professionals;*
- 5. Integrate within a team entrusted with the management, conservation, preservation and care of cultural heritage with awareness of personal competencies;*
- 6. Understand the ethical and legal obligations of working in the field of cultural heritage as well as the limitations permitted at law.*

Entry Requirements

Any MCAST Level 3 Diploma; OR
4 SEC/O-Level/SSC&P (Level 3) passes

Other Entry Requirements

Applicants may be asked to sit for an Interview.

Key Information

Awarding Body - MCAST

Accreditation Status - Accredited via MCAST's Self Accreditation Process (MCAST holds Self-Accrediting Status as per 1st schedule of Legal Notice 296/2012)

Type of Programme: Qualification

MQF Level	Examples of Qualifications	'Qualification' Minimum Credits Required	'Award' Credits Required
Level 8	Doctoral Degree Third Cycle Bologna Process	NA	NA
Level 7	Masters Second Cycle Bologna Process	90-120	Less than 30
	Post-Graduate Diploma	60	
	Post-Graduate Certificate	30	
Level 6	Bachelor ²³ /Bachelor (Hons.) ²⁴ First Cycle Bologna Process	180-240	Less than 180
Level 5	Short Cycle Qualification	120	Less than 60
	Undergraduate Higher Diploma	90	
	Undergraduate Diploma	60	
	Undergraduate Certificate	30	
	VET Level 5 Programme ²⁵	60-120	
Level 4	Pre-Tertiary Certificate	30	Less than 120
	VET Level 4 Programme ²⁶	120	
	MATSEC Certificate	NA	
Level 3	VET Level 3 Programme ²⁷	60	Less than 60
	General and Subject Certificate	NA	
Level 2	VET Level 2 Programme ²⁸	60	Less than 60
	General and Subject Certificate	NA	
Level 1	VET Level 1 Programme ²⁹	40	Less than 40
	General and Subject Certificate	NA	
Introductory Level A	Preparatory Programme	30	Less than 30
Introductory Level B	Pre-entry Basic Skills Course	30	Less than 30

Table 1: Minimum number of credits for 'Qualifications' and parameters for 'Awards'

Fig.1: p56, Ministry for Education and Employment & National Commission for Further and Higher Education Malta (2016). *Referencing Report, 4th Edition*. NCFHE.

Total number of Hours: 3000

Mode of attendance: Full Time

Duration: 2 Years

Target audience for MCAST full-time courses is 16 to 65+

Target group: Students exiting compulsory education

The official language of instruction at MCAST is English. All notes and textbooks are in English (except for language courses which will be in the respective language being instructed). International candidates will be requested to meet English language certification requirements for access to the course.

This course will be offered at

MCAST has four campuses as follows:

MCAST Main Campus

Triq Kordin, Paola, Malta

All courses except for the Institute for the Creative Arts, Centre of Agriculture, Aquatics and Animal Sciences are offered here.

Institute for the Creative Arts

Mosta Campus

Misraħ Ghonoq Targa Gap,

Mosta

Institute of Applied Sciences,

Centre of Agriculture, Aquatics and Animal Sciences,

Luqa Road, Qormi

Gozo Campus

J.F. De Chambray Street

MCAST, Ghajnsielem

Gozo

Teaching, Learning and Assessment

The programmes offered are vocational in nature and entail both theoretical lectures delivered in classes as well as practical elements that are delivered in laboratories, workshops, salons, simulators as the module requirements dictate.

Each module or unit entails a number of in person and/or online contact learning hours that are delivered by the lecturer or tutor directly (See also section 'Total Learning Hours').

Access to all resources is provided to all registered students. These include study resources in paper or electronic format through the Library and Resource Centre as well as tools, software, equipment and machinery that are provided by the respective institutes depending on the requirements of the course or module.

Students may however be required to provide consumable material for use during practical sessions and projects unless these are explicitly provided by the College.

All Units of study are assessed throughout the academic year through continuous assessment using a variety of assessment tools. Coursework tasks are exclusively based on the Learning Outcomes and Grading Criteria as prescribed in the course specification. The Learning Outcomes and Grading Criteria are communicated to the Student via the coursework documentation.

The method of assessment shall reflect the Level, credit points (ECTS) and the schedule of time-tabled/non-timetabled hours of learning of each study unit. A variety of assessment instruments, not solely Time Constrained Assignments/Exams, are used to gather and interpret evidence of Student competence toward pre-established grading criteria that are aligned to the learning outcomes of each unit of the programme of study.

Grading criteria are assessed through a number of tasks, each task being assigned a number of marks. The number of grading criteria is included in the respective Programme Specification.

The distribution of marks and assessment mode depends on the nature and objectives of the unit in question.

Coursework shall normally be completed during the semester in which the Unit is delivered.

Time-constrained assignments may be held between 8 am and 8 pm during the delivery period of a Unit, or at the end of the semester in which the Unit is completed. The dates are notified and published on the Institute notice boards or through other means of communication.

Certain circumstances (such as but not limited to the Covid 19 pandemic) may lead Institutes and Centres to hold teaching and assessment remotely (online) as per MCAST QA Policy and Standard for Online Teaching, Learning and Assessment (Doc 020) available via link <https://www.mcast.edu.mt/college-documents/>

The Programme Regulations referenced below apply. (DOC 004* available at: link <https://www.mcast.edu.mt/college-documents/>

Total Learning Hours

The total learning hours required for each unit or module are determined as follows:

Credits (ECTS)	Indicative contact hours	Total Student workload (hrs)	Self-Learning and Assessment Hours
1	5 - 10 hrs	25 hrs	20-15 hrs*
2	10 - 20 hrs	50 hrs	40-30 hrs*
3	15 - 30 hrs	75 hrs	60-45 hrs*
4	20 - 40 hrs	100 hrs	80-60 hrs*
6	30 - 60 hrs	150 Hrs	120-90 hrs*
9	45 - 90 hrs	225 hrs	180-135 hrs*
12	60 - 120 hrs	300 hrs	240-180 hrs*

* The 'Self-Learning and Assessment Hours' amount to the difference between the contact hours and total student workload.

Grading system

All MCAST programmes adopt a learner centred approach through the focus on Learning Outcomes. The assessment of MCAST programmes is criterion-referenced and

thus assessors are required to assess learners' evidence against a pre-determined set of Learning Outcomes and assessment criteria.

For a student to be deemed to have successfully passed a unit, a minimum of 50% (grade D) must be achieved. In case of part time programmes, the student must achieve a minimum of 45% to successfully pass the unit.

All units are individually graded as follows:

A* (90-100)

A (80-89)

B (70-79)

C (60-69)

D (50-59)

Unsatisfactory work is graded as 'U'.

Work-based learning units are graded on a Pass/Fail basis only.

Detailed information regarding the grading system may be found in the following document: DOC 004* available at: link <https://www.mcast.edu.mt/college-documents/>

Intake Dates

- MCAST opens calls for application once a year between July and August of each year for prospective applicants residing in MALTA.
- Applications to full-time courses from international students not residing in MALTA are accepted between April and Mid-August.
- For exact dates re calls for applications please follow this link <https://www.mcast.edu.mt/online-applications-2/>

Course Fees

MCAST course are free for Maltese and EU candidates. International candidates coming from outside the EU need to pay fees for the respective course. Course fees are set on a per-level and course duration basis. For access to course fee structure and payment methods please visit <https://www.mcast.edu.mt/fee-payments-for-non-eu-candidates/>.

Method of Application

Applications to full-time courses are received online via the College Management Information System. Candidates can log in using Maltese Electronic ID (eID) or European eIDAS (electronic identification and trust services) to access the system directly and create an account as the identity is verified electronically via these secure services.

Non-EU candidates need to request account creation through an online form by providing proof of identification and basic data. Once the identity is verified and the account is created the candidate may proceed with the online application according to the same instructions applicable to all other candidates.

Non-EU candidates require a study visa in order to travel to Malta and join the course applied for. For further information re study-visa please access <https://www.identitymalta.com/unit/central-visa-unit/>.

For access to instructions on how to apply online please visit <https://www.mcast.edu.mt/online-applications-2/>

Contact details for requesting further information about future learning opportunities:

MCAST Career Guidance

Tel: 2398 7135/6

Email: career.guidance@mcast.edu.mt

Current Approved Programme Structure

Unit Code	Unit Title	ECTS	Year	Semester
CACLH-403-2101	Cultural Heritage: Theory & Ethics	3	1	A
CACLH-406-2201	Care of Collections & Exhibition Preparation	6	1	YEAR
CACLH-403-2108	Health and Safety at Work	3	1	A
CACLH-406-2202	Documentation Techniques	6	1	YEAR
CACLH-407-2203	Understanding Collections & Sites I	7	1	YEAR
CACLH-409-2204	Science for Cultural Heritage I	9	1	YEAR
CACLH-409-2205	Contextual Studies I	9	1	YEAR
CACMP-405-2202	Vocational Competences in Heritage Skills I	5	1	YEAR
CDKSK-406-2001	English	6	1	YEAR
CDKSK-406-2109	Information Technology	6	1	YEAR
CACLH-406-2206	Science for Cultural Heritage II	6	2	YEAR
CACLH-403-2207	Understanding Collections & Sites II	3	2	A
CACLH-403-2208	Contextual Studies II	3	2	B
CACLH-408-2209	Books, Paper and Textiles Heritage Skills	8	2	YEAR
CACLH-408-2210	Wood Heritage Skills	8	2	YEAR
CACLH-408-2211	Stone Heritage Skills	8	2	YEAR
CACLH-408-2212	Metal Heritage Skills	8	2	YEAR
CDKSI-406-1901	Il-Malti għall-Istitut tas-Servizzi fil-Komunità, tax-Xjenzi Applikati u għall-Arti Kreattiva	6	2	YEAR
CACMP-404-2203	Vocational Competences in Heritage Skills II	4	2	YEAR
CDKSK-402-2104	Community Social Responsibility	2	2	A
CDKSK-404-1915	Employability and Entrepreneurial Skills	4	2	A
Total ECTS		120	/	/

CACLH-403-2101: Cultural Heritage: Theory & Ethics

Unit level (MQF/EQF): 4

Credits: 3

Delivery Mode: Face to Face

Total Learning Hours: 75

Unit Description

This unit will define cultural heritage and will introduce the distinction between its conservation and restoration; a discussion of values, including those tied to vandalism and repatriation, will be central to this introduction. The unit will address the broader principles of conservation theory and ethics. Attention will be given to the recognition and interpretation of cultural value, and how this may be universally assigned to monuments and sites, as well as artefacts. The unit will focus on the fundamental interpretation of specific, recurring concepts in conservation, such as the issues of contextuality and authenticity, and the treatment of patina and lacunae, and how these concerns have developed over the centuries. Furthermore, learners will familiarise themselves with the key legal implications of conservation in addition to International Charters and Conventions.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Describe the evolution of contemporary ethics and standards of practice in relation to the recent history of conservation theory in cultural heritage.*
2. *Explain key recurring concepts in conservation.*
3. *Analyze and distinguish between different values assigned to monuments, sites and artefacts.*
4. *Synthesize aspects of national legislation and a number of International Charters in relation to the socio-cultural contexts from which they originate.*

CAC LH-403-2108: Health and Safety at Work

Unit level (MQF/EQF): 4

Credits: 3

Delivery Mode:

Contact hours:

Unit Description

This unit provides a broad introduction to the general principles of health and safety at work. It outlines the common occupational hazards and risks, and accounts for specifics related to heritage skills sites and workshops, and general science laboratories. Furthermore, this unit enables the learner to work in a manner that improves health and safety in the place of work.

The unit outlines basic EU legal principles in occupational health and safety in accordance with Maltese legislation, and discusses the causes and consequences of inadequate health and safety control. It introduces learners to aspects of accident prevention within the workplace. Furthermore, it discusses workplace conditions and facilities, and equipment (including hazards and control). The unit also goes into the basics of risk assessment. Moreover, it tackles the health and safety matters linked to manual handling, lifting and carrying, hazardous substances, and ergonomics and workplace design.

The unit also provides the learner with the necessary basics in first aid. It defines the roles and responsibilities of a first aider. It provides the knowledge and skills in carrying out a basic assessment of an incident, and through this unit the learner will also know how to examine a casualty, recognise common injuries and types of ill-health and provide appropriate first aid treatment.

The unit also introduces the learner to the principles of firefighting. It discusses fire, its classes, and the way it spreads. Moreover, it outlines the different types of fire extinguishers and their uses and colour codes with a view to the appropriate selection of fire extinguishers in given circumstances as applicable to cultural heritage. It also demonstrates how fire extinguishers are safely used.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Explain occupational health and safety and its importance;*
2. *Assess, in a basic way, risk at the workplace;*
3. *Apply basic first aid principles;*
4. *Apply basic firefighting principles.*

CDKSK-406-2001: English

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Contact hours: 60

Unit Description

The main objective of this unit is to prepare students to use the English language to understand, analyse, organise and communicate specific technical knowledge by inferring meaning from, and using, embedded information, being able to evaluate information critically and communicate through different types of texts, as required by various but often specific technical contexts within the selected field of study.

The emphasis is on the processes needed to transition from use of the English language in General Education to that required for access to Higher Education.

In particular, L4 Key Skills English is targeted at learners who have completed Foundation College programmes (Levels 1 to 3) and seek to further their studies at Technical or Degree level.

In this respect, this unit recognises the necessity to meet two linguistic demands at this threshold level; strengthening students' linguistic competences to be able to communicate more specifically within their vocational area and stream and to prepare them for more rigorous academic thinking, research and writing as necessitated by degree courses.

Being introduced at this level are core and elective unit outcomes. Reading and writing outcomes are core components in this syllabus while listening and speaking are elective components. Every L4 programme must deliver the two core outcomes and any one of the two elective learning outcomes. The elective criteria to be assessed cannot be selected from and across both outcomes.

Learning Outcomes

On completion of this unit the student will be able to

1. *Read technical texts effectively to improve knowledge of the subject area.*

2. *Understand information presented orally in the form of recordings, or talks, discussions, seminars, interviews or presentations.*
3. *Demonstrate own understanding of the subject matter via oral presentation, mock interviews or similar oral delivery.*
4. *Write a research paper or technical report demonstrating cohesion, structure and appropriate style.*

CDKSK-406-2109: Information Technology

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit aims to impart to the learners the necessary skills to produce, report, and analyse their work in a digital environment. Based on five learning outcomes which when combined give the learners the possibility to create advanced reports, represent data visually, understand the target audience and prepare outstanding presentations as well as manipulate images. Finally, the unit shows the learners how to keep the files generated safe from various mishaps.

At this level, most of the reports being prepared by the learners will require a certain level of detail, possibly producing reports which contain a substantial number of pages. This unit will show the learners how to master such large documents. Some information is better represented in a visual form. Using spreadsheet software, this unit will demonstrate to the learners how to create advanced charts, create what-if scenarios as well as how to analyse and validate the data being inputted. Building upon previous learning, this unit demonstrates how to create presentations, which are adequate for the audience and the venue. Moreover, the presentations will be enriched with multimedia content to enrich the experience of the audience.

Throughout the unit, the learners will be making use of images. Hence image manipulation skills will also be conveyed during the delivery of the unit. This ensures that the images being used are adequate for the task and represent the message that the learner needs to convey.

With each unique file being created representing tens of hours of work, it is imperative that files are backed up properly. The final part of this unit deals with the various forms of data replication and will provide the learners with the possibility of implementing and testing their own backup strategy that fits their needs.

Learning Outcomes

On completion of this unit the student will be able to

1. *Use a word processing application to manage complex documents.*
2. *Present data visually and produce advanced outputs using a spreadsheet application.*
3. *Use a presentation application to produce multimedia centric outputs.*
4. *Use an image editing application to manipulate images.*
5. *Analyse and implement a data replication strategy.*

CDKSI-406-1901: Il-Malti għall-Istitut tas-Servizzi fil-Komunità, tax-Xjenzi Applikati u għall-Arti Kreattiva

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Contact hours: 60

Deskrizzjoni tal-Unità

Din l-unità hija intenzjonata li ssaħħaħ il-ħiliet tal-qari, is-smiġħ, it-taħdit u l-kitba bil-Malti għall-istudenti tar-raba' livell fi ħdan l-Istitut tas-Servizzi fil-Komunità (ICS), l-Istitut tax-Xjenzi Applikati (IAS) u l-Istitut għall-Arti Kreattiva (ICA). Il-ħsieb aħħari huwa dejjem li l-istudenti jsaħħu dawn l-erba' ħiliet biex 'il quddiem ikunu jistgħu japplikawhom b'mod korrett fuq il-post tax-xogħol tagħhom.

L-istudenti se jkunu qed jitharrġu janalizzaw testi moqrija u jifhmu l-kontenut primarju tagħhom. Mhux biss, imma għandhom ukoll jagħrfu messaġġi mhux daqstant diretti fl-istess testi, għal fehim aktar sħiħ u komplut.

Dan jgħodd ukoll għal kuntesti differenti ta' smiġħ. Biex komunikazzjoni tkun effettiva jeħtieġ li wieħed jitharreg jisma' sew u jifhem dak li qed jingħad. Xi drabi, minkejja li nkunu qed nitkellmu bl-ilsien nattiv tagħna, mhux dejjem niftehm tajjeb u dan jista' jwassal għal diversi konvergenzi kemm fuq il-post tax-xogħol u anki fil-ħajja soċjali tagħna. L-istudenti se jkunu qed jitharrġu wkoll jiffirmolaw opinjoni fuq suġġetti u argumenti mismugħa minn lat kritiku.

L-istess punt jgħodd għat-taħdit. L-istudenti għandhom ikunu mħarrġa kemm fit-taħdit produttiv kif ukoll dak interattiv. Minkejja li l-influwenza tal-Ingliż qiegħda dejjem tkompli tikber u anki fuq il-postijiet tax-xogħol issib min jagħzel li jitkellem bl-Ingliż, madanakollu ma nistgħux niċċdu l-fatt li fuq il-postijiet tax-xogħol, it-taħdit, sew dak bejn min iħaddem, il-ħaddiema nfushom u anki l-klijenti, b'mod ġenerali jsir bil-Malti. Għalhekk l-istudenti għandhom ikunu kapaċi jitkellmu b'Malti tajjeb u ċar, b'vokabolarju addattat skont il-qasam partikulari u l-kuntest tax-xogħol tagħhom. L-għan ta' meta wieħed jitkellem huwa dak li jiġi mifhum, li jikkomunika tajjeb ma' ħaddieħor. Għaldaqstant wieħed għandu jitharreg ukoll fit-taħdit interattiv; kif wieħed jikkomunika tajjeb mal-oħrajn. Nuqqas ta' komunikazzjoni ħafna drabi twassal għal diffikultajiet u xi drabi anki kunflitti, speċjalment fuq il-post tax-xogħol.

Se tkun qed tingħata wkoll l-importanza li jistħoqqilha, il-kitba. Persuna Maltija għandha jkollha bażi tajba ta' għarfien tar-regoli tal-ortografija u l-grammatika biex meta tuża l-ilsien nattiv fil-kitba tagħha tagħmel dan bl-inqas żbalji possibbli. L-istudenti se jkunu qed jitharrġu wkoll fi traduzzjonijiet mill-Ingliż għall-Malti. Minkejja li nistgħu nitqiesu fortunati li pajjiżna huwa pajjiż bilingwali u li l-Ingliż huwa wkoll lingwa ufficjali tagħna, flimkien mal-Malti, xi drabi l-influwenza tal-Ingliż mhux dejjem tgħin lill-individwu jagħmel użu tajjeb mill-Malti. Il-mezzi ta' komunikazzjoni u l-influwenza ta' sorsi oħra bħall-midja soċjali, mhux dejjem qed iservu ta' influwenza pożittiva għal tfal u zgħażaġħ Maltin f'dak li għandu x'jaqsam mal-kitba bil-Malti. Għalhekk f'din l-unità l-istudenti se jkunu qed jitharrġu wkoll f'dan il-qasam bl-iskop aħhari jkun li fuq il-post tax-xogħol jagħmlu użu tajjeb ukoll mill-Malti miktub. Dan jintrabat ukoll mal-fatt li jridu jibqgħu aġġornati ma' xi tibdil li jista' jsir minn żmien għal żmien fil-lingwa inkluż aġġornamenti fl-ortografija.

Il-Kisbiet mit-Tagħlim (Learning Outcomes)

Fi tmiem din l-unità l-istudenti għandhom ikunu kapaċi:

- 1. Janalizzaw testi tekniċi moqrija u jagħmlu distinzjoni bejn il-kontenut primarju u dak sekondarju;*
- 2. Jaddattaw strateġiji varji biex jifhmu u jsegwu kuntesti differenti ta' smiġħ, b'mod partikulari dawk relatati ma' oqsma differenti tax-xogħol, u jiformolaw opinjoni dwar dak li jkunu semgħu;*
- 3. Ifissru ruħhom tajjeb u b'mod effettiv bil-Malti mitkellem kemm għal skop ta' komunikazzjoni produttiva kif ukoll dik interattiva;*
- 4. Jiktbu tajjeb bil-Malti skont ir-regoli ortografiċi u grammatikali tal-lingwa, jinqadew b'vokabolarju wiesa' u jhaddnu stili xierqa skont dak li hu mitlub f'kuntesti varji fuq il-postijiet tax-xogħol;*
- 5. Japplikaw b'mod tajjeb il-Malti meta jiġu biex jaqilbu kuntesti varji mill-Ingliż, relatati mal-qasam tagħhom, bil-kitba.*

CDKSK-402-2104: Community and Social Responsibility

Unit level (MQF/EQF): 4

Credits: 2

Delivery Mode: Face to Face

Total Learning Hours: 50

Unit Description

This unit focuses on Community Social Responsibility and provides an opportunity for learners to better understand themselves and the others and to establish goals in life. Community social responsibility enables learners to understand their strengths and areas for improvement and prepares them for life, employment and to become active citizens in society.

Moving away from traditional delivery of other units, learners will be empowered to take ownership of their learning process. Hence, community social responsibility will be delivered through a combination of workshops, small-group sessions with mentors and various opportunities to reflect.

The set of sessions will tackle community social responsibility skills and will mostly focus on the self, the ability to work independently and important values in life. The second set of sessions will address interpersonal skills and will focus on working with others, dealing with diversity and conflicts. Furthermore, at the end of the sessions, the learners will be introduced to the importance of active citizenship in life.

Learning Outcomes

On completion of this unit the student will be able to

1. *Identify personal goals through self-reflection.*
2. *Evaluate how collaboration with others can be more effective.*
3. *Explain the importance of giving and receiving feedback.*
4. *Contribute actively to make a difference in society.*

CDKSK-404-1915: Employability and Entrepreneurial Skills

Unit level (MQF/EQF): 4

Credits: 4

Delivery Mode: Face to Face

Total Learning Hours: 100

Unit Description

This unit complements the vocational and key skill units at Level 4 and provides an opportunity for learners to enhance their employability and entrepreneurial skills.

Quite often, learners tend to focus most on technical skills and competences required in a certain trade which enable them to access employment. On the other hand, employers expect employees to be appropriately skilled to follow instructions, take initiative, work effectively in a team, take a lead when necessary and more. In view of this the unit starts with an introduction to the 4th industrial revolution and proceeds to the transversal skills necessary to find employment, retain employment and advance at the place of work. Learners will be able to highlight their strengths and identify the areas that require improvement.

The rest of the unit focuses on entrepreneurial skills, a skill which is one of the most important transversal skills identified by UNESCO. Learners are introduced to methods which can be used to generate new and innovative business ideas and methods which help them evaluate ideas and choose the most feasible. Furthermore, learners will cover the various stages of product and/or service development, including market analysis, processes, pricing strategy, promotion and resources required.

Learners will work in a small team and by the end of the unit they will have the opportunity to develop a business idea which is commercially viable. Furthermore, they will present the idea to prospective investors/stakeholders.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Understand the employability skills required for Industry 4.0*
- 2. Use idea generation techniques to come up with ideas and evaluate chosen ideas*
- 3. Understand the various stages of product and/or service development*
- 4. Work in a team to develop a business idea which is commercially viable*

CACLH-409-2204: Science for Cultural Heritage

Unit level (MQF/EQF): 4

Credits: 9

Delivery Mode: Face to Face

Total Learning Hours: 225

Unit Description

This unit provides an introduction to the basics of science relevant to cultural heritage to provide an essential background for students with little or no science background to understand materials and treatments commonly encountered in cultural heritage. The unit starts with the familiarisation of measurements of physical quantities, the use of scientific notation used in science and introduces the concept of scientific methods for analysis. The unit then covers specific topics related to chemistry, physics, biology and material science that are relevant to different materials commonly encountered in cultural heritage objects.

The unit covers core topics of chemistry including an introduction to the states of matter and the Kinetic Particle Theory, atoms and the periodic table, the electronic structure of atoms, bonding theories and intermolecular forces, ionic and covalent compounds, chemical formulae and equations and reaction kinetics. The unit also outlines facts of chemistry including the differences between pure substances and mixtures and physical properties of solutions. Chemistry in action is then explored in relation to materials commonly making up cultural heritage objects. Specifically, solution chemistry, acid-base chemistry, oxidation-reduction reactions and electrochemistry will be discussed.

A basic introduction to material science including metallurgy and chemistry of metals as well as modern material chemistry including polymers, ceramics and composite materials will also be provided. The material science component will give emphasis to the classification and diversity of materials commonly encountered in cultural heritage. The difference between amorphous and crystalline material types at the microstructure level will be discussed as well as the chemical and physical properties including mechanical and thermal properties of different materials classes commonly found in a cultural heritage settings.

The physics component of the unit introduces basics of linear motion and properties of forces and mechanical loads together with thermal physics including heat transfer, conductors and emitters of heat, expansion, and evaporation. The nature of light in relation to the electromagnetic spectrum will also be explored.

The biology part of the unit introduces the living world and will focus on unicellular and multicellular organisms including bacteria, fungi, algae, plants and animals commonly associated with cultural heritage objects and environs. Their structure, life-cycles, adaptations and metabolic processes will be discussed in relation to deterioration and

degradation. A brief introduction to biological molecules and chemistry of life may also be covered.

Finally the unit will also include an introduction to the major agents of deterioration in relation to different materials making cultural heritage objects and gives a brief introduction to prevention strategies commonly used to protect cultural heritage materials.

This unit serves as the foundation upon which Science for Cultural Heritage 2 is built.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Explain theory and basics of chemistry and material science relevant to cultural heritage.*
2. *Explain theory and basics of physics relevant to cultural heritage.*
3. *Explain theory and basics of biology relevant to cultural heritage.*
4. *Relate science to damage and prevention to a variety of cultural heritage materials.*

CACLH-406-2206: Science for Cultural Heritage II

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This study unit builds on the previous science study unit ‘Science for Cultural Heritage 1’ to provide a more detailed understanding of the intrinsic and extrinsic deterioration factors affecting cultural heritage materials.

The study unit starts off by providing a comprehensive understanding of the different classes of materials that are commonly used to bind, decorate, coat and finish cultural heritage objects. It also discusses the possibilities and limitations of these materials and discusses the advantages and disadvantages of different material types.

Deterioration will be discussed in relation to inherent vice based on the the fundamental instability of the components making up cultural heritage objects as well as deterioration caused by external forces. In this unit the learner will gain awareness of the effects of light, humidity and temperature on different materials from a structural and chemical perspective. This will include how fluctuations of humidity and temperature as well as light type and intensity can impact items of cultural heritage. Measures which can be taken against such agents of deterioration will also be reviewed.

Special attention will also be given to how dust, pollutants and biological pests affect cultural heritage, since these are the agents most commonly observed in display environments. The measures which can be taken against such agents of deterioration will also be reviewed.

The unit will also discuss basic scientific principles associated with the care of cultural heritage property. It will discuss the scientific principles behind the correct display, packing, storage and movement of objects of cultural heritage value from a scientific perspective. Learners will thus be provided with a scientific basis with regards to topics being learned in complimentary units.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Describe the basic composition and properties of binders, adhesives, pigments, dyes, coatings and finishings.*
- 2. Explain the scientific relationship between environmental conditions including light, humidity and temperature on the well-being of cultural property.*

3. *Recognise the importance of controlling dust, pollutants and biological pests in a cultural heritage environment.*
4. *Illustrate how the care of materials used in cultural property is based on scientific principles, including object packaging, movement, display and storage.*